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Case Report

Primary amenorrhea with transverse vaginal septum

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ABSTRACT

Transverse vaginal septum is a rare congenital anomaly with an incidence of 1:2100 due to incomplete fusion of mullerian duct and the urogenital sinus component of the vagina. Surgical management of the transverse vaginal septum is based on its thickness and its location in the vagina. A 13-year-old girl presented with cyclical abdominal pain for 3 months without attaining menarche. Examination revealed a blind ending vagina. Ultrasound and MRI revealed hematocoplos and hematometra. Septum was located 2.5 cm away from vaginal introitus, of 3.4 mm thickness. Vaginal septal resection was performed under general anaesthesia followed by drainage of the hematocoplometra and vaginal reconstruction by suturing cut edges of septum with the hymen with interrupted sutures with vicryl. Cervix was visualised under endoscopic guidance during the procedure. Patient tolerated the procedure well with no postoperative complications or bleeding. Patient was discharged on day 3 on oral antibiotics and a metronidazole and lignocaine gel for local application. Patient was followed up in OPD on Day 7 postoperatively and was advised to use a vaginal dilator. Patient attained her regular menstrual cycles after 1 month of surgery. Timely diagnosis of transverse vaginal septum is essential to prevent future complications of amenorrhea, endometriosis and infertility. The management is essentially surgical taking into account the risk of postoperative stenosis and need of vaginal molds or dilators.

Keywords: Amenorrhea, Hematometra, Hematocoplos, Vaginal dilators

INTRODUCTION

Transverse vaginal septum (TVS) is a rare anomaly of the female genital tract whose incidence ranges from 1:2100 to 1:84000.[1-3] Physiologically, the sinovaginal bulbs invaginate from the urogenital sinus and meet the Müllerian tubercle on the caudal end of the Müllerian ducts to form the vaginal plate that is then canalized to form the lower part of the vagina.[4] The incomplete fusion between mullerian duct component and urogenital sinus component of vagina results in a transverse vaginal septum. It varies in thickness and can be located at almost any level in the vagina with a reported incidence of 46% in upper vagina, 40% in mid vagina, and 14% in the lower vagina.[5] Genitourinary and gastrointestinal tract anomalies might be associated with TVS, such as: imperforate anus, mal-rotation of the gut, ectopic ureter with hypoplastic kidney, hydronephrosis, vesicovaginal fistula, and bicornuate uterus.[6] Rare defects include musculoskeletal defects, aorta coarctation and atrial septal defect. Clinical examination, ultrasound, and magnetic resonance imaging (MRI) are all used in the diagnosis, and the MRI is useful before the surgery to determine the thickness and depth of the septum.[7]

CASE REPORT

A 13-year-old girl presented to the emergency department with complaints of lower abdominal pain for 3 months duration. Abdominal pain was cyclical in nature occurring every 24 days lasting for 4 days. She never attained menarche. On examination, secondary sexual characteristics were well developed, abdomen was soft with no guarding and tenderness. Local examination

showed a blind vagina. On pelvic ultrasound, a 13×7.5×6.5 cm anechoic homogenous collection distending the uterus and vagina was seen and a diagnosis of hematocoplometra was made (Figure 1). An MRI was performed, and it showed proximal vagina and uterine distension, involving the cervix. The vagina appeared to terminate in a low complete transverse septum, 2.5 cm from the vaginal introitus, with a 3.4 mm thickness. The distended vagina measured 5.5×7.5×11.5 cm (Figure 2 and 3). An impression of primary amenorrhea with transverse vaginal septum was made. A detailed examination under anaesthesia with transverse vaginal septal resection was planned.

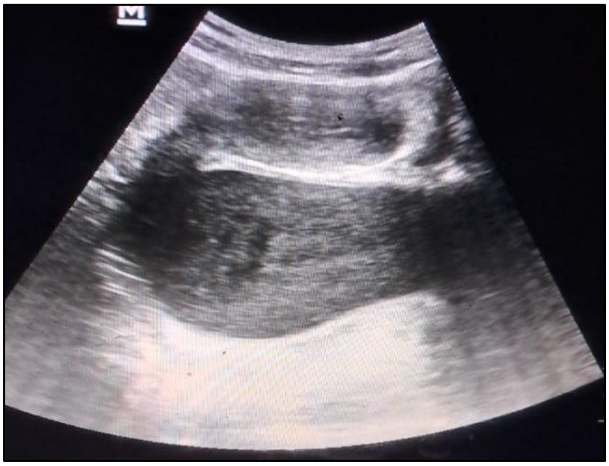

Figure 1: USG findings of hematocoplos.

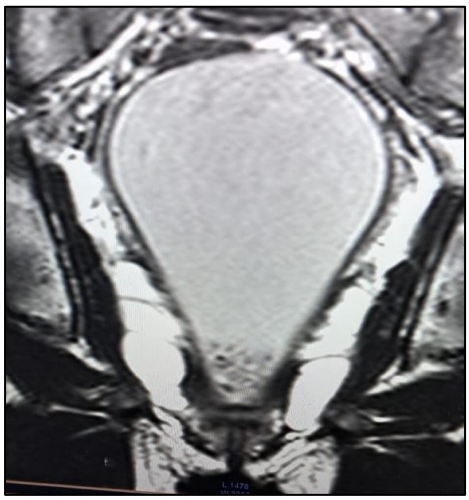

Figure 2: MRI showing transverse vaginal septum with hematocoplos (coronal view).

After counselling about procedure, the patient and her family provided a written informed consent for the same. Figure 4 depicts a preoperative image. Examination under anaesthesia revealed a blind ending vagina. On per rectal examination, bulging of the anterior rectal wall was felt in the rectal canal of size 8 cm beginning 2.5 cm away from anal opening.

After infiltrating the vaginal mucosa with adrenaline and normal saline, a nick incision was made transversely in the centre of the blind vaginal pouch and dissection carried out with sharp dissection, till a fibrous septum was identified. A wide bore needle with a syringe was used for aspiration from the fibrous septum which revealed the presence of Hematocoplos. The vaginal septum was held with 2 allis forceps and a nick incision given (Figure 5) and 300 ml of hematocoplometra (Figure 6) was drained. After complete drainage of the Hematocoplometra, 5 mm endoscope was introduced to visualise the cervical os (Figure 7). Vaginal reconstruction was done by suturing the cut edges of the septum with hymen with interrupted sutures using vicryl no 2-0 (Figure 8).

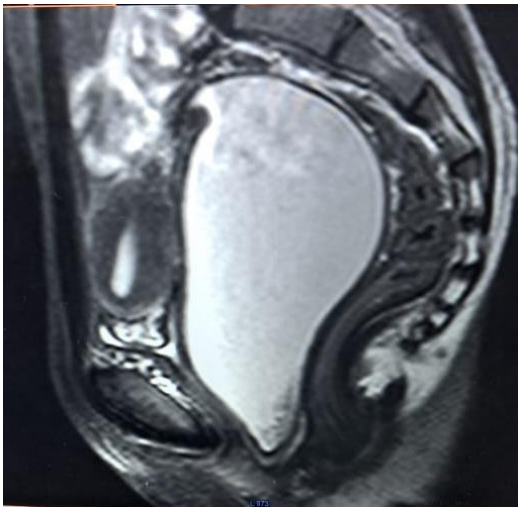

Figure 3: MRI showing transverse vaginal septum with Hematocoplometra (sagittal view).

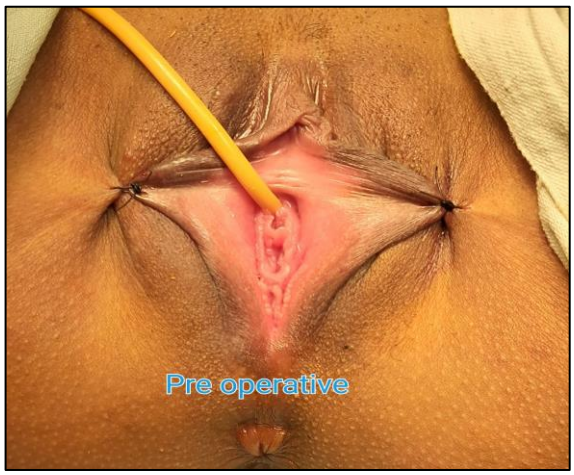

Figure 4: Preoperative image.

Patient tolerated the procedure and anaesthesia well. Post operative period was uneventful and full course of intravenous antibiotics were given. Patient was discharged on day 3 on oral antibiotics and a metronidazole and lignocaine gel for local application. Patient was followed up in OPD on Day 7 postoperatively (Figure 9) and was

advised to use vaginal dilator (Size no 8). Patient attained her regular menstrual cycles after 1 month of surgery.

She was followed up monthly on opd basis. The patient experienced regular menses and no other symptoms or discomfort 6 months (Figure 10) and 12 months after the procedure.

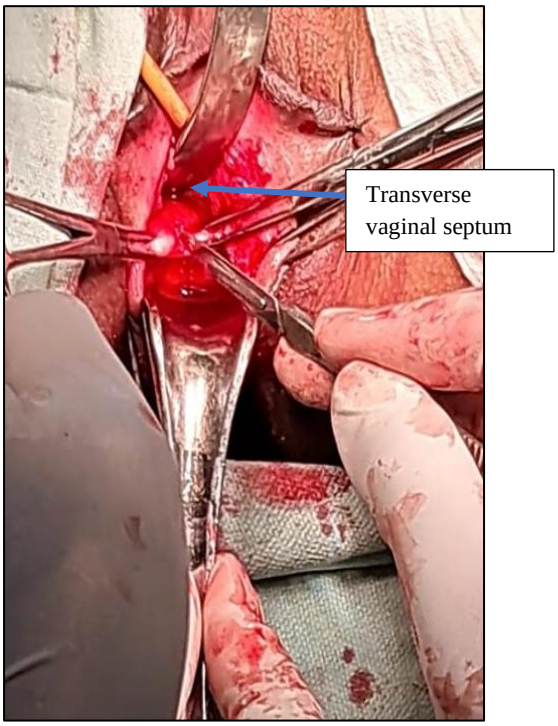

Figure 5: Intraoperative image of transverse vaginal septum.

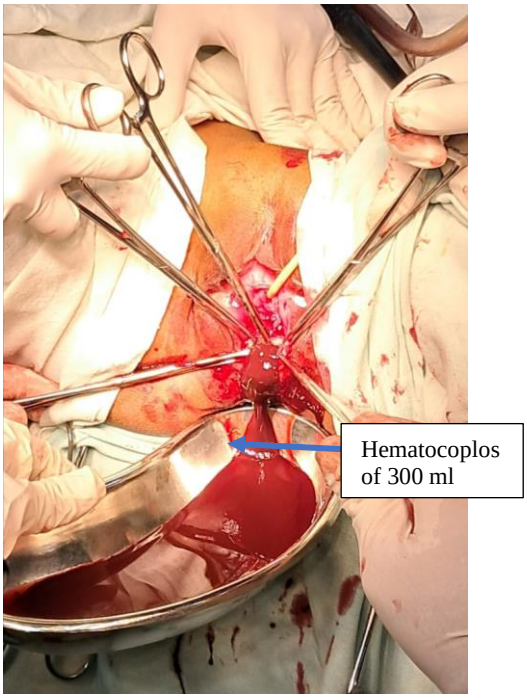

Figure 6: Intraoperative image of hematocoplos.

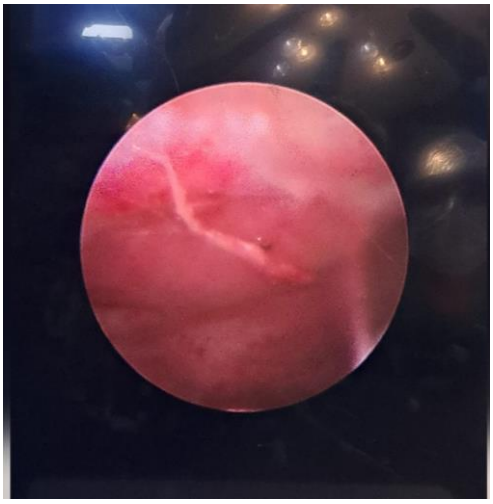

Figure 7: Endoscopic visualisation of cervical os.

Figure 8: Vaginal reconstruction.

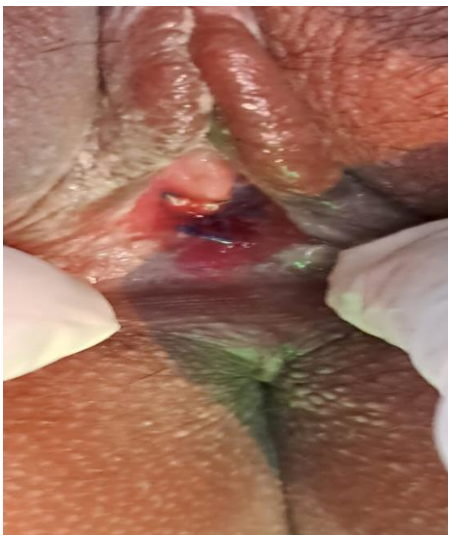

Figure 9: Postoperative day 7 image.

Figure 10: Vagina dilated with vaginal dilator no 8 (6 months post operative image).

DISCUSSION

A transverse vaginal septum (TVS) results from either incomplete canalization of the vaginal plate or failure of the paramesonephric ducts to meet the urogenital sinus.[5] The location of the septum is based on the distance of its distal end from the vaginal introitus, and it can be low (< 3 cm), mid (3–6 cm), or high (>6 cm). Based on the thickness, the septum can be thin (<1 cm) or thick (>1 cm).[1] Thickness of the septum is an important criterion to decide the surgical management and also influences the short and the long-term consequences.

According to ESHRE 2013 system, TVS is considered in V3 class of vaginal anomaly.[8] The diagnosis of a TVS is based on clinical and radiological findings. In young women presenting with primary amenorrhea and cyclical abdominal pain with developed secondary sexual characteristics, an obstructive genital tract anomaly should be considered. Imperforate hymen and transverse vaginal septum are the differential diagnosis which can be differentiated on physical examination. The best imaging technique for diagnosing TVS is the MRI, as it provides information about the site of the septum, its distance from the introitus and its thickness and any other associated genitourinary anomalies. There are various surgical techniques described in literature for TVS with the primary objective being removal of the septum without shortening the vagina. The most popular approach is resection and anastomosis. The surgical technique for anastomosing the vagina depends on the thickness of the vaginal septum.

A thin septum can be easily resected followed by end-to-end anastomosis especially if it is a low vaginal septum.[9] Thick septum is difficult to remove and leads to exposure of a wider raw surface after resection which is difficult to anastomose and requires a graft or a flap technique. Other surgical techniques which have been mentioned in the literature include the Grünberger method which involves making a cross shaped incision on caudal part of the septum and a cruciate incision on the cranial part and a transverse closure. The push through and pull through technique is a combined abdominal-vaginal approach considered in those with a higher risk of restenosis. Olbert balloon catheter is a modification of the pull through technique.[10]

Common postoperative complications include vaginal stenosis and obstruction and therefore the risk of repeated surgeries. In the course of time, it may further complicate to endometriosis and infertility. To decrease the chance of vaginal stenosis, vaginal molds or dilators can be used as was done in our case. This requires a good patient compliance as these patients are young girls who may not be emotionally mature enough to use them. Therefore, this requires a good counselling to the patient and their mothers about the need of regular use of dilators and hospital follow ups in initial postoperative days.

CONCLUSION

Transverse vaginal septum is a rare and a challenging condition which is amenable to surgical intervention. It requires prompt diagnosis and proper management in order to preserve normal reproductive physiology and fertility and prevention of future complications. A good psychosocial support to the patient by the healthcare provider and her family members also plays an important role.

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